

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

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PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Applicant's or agent's file reference 010941-0003		Date of mailing (day/month/year) 07 April 2005 (07-04-2005)																									
FOR FURTHER ACTION See paragraph 2 below																											
International application No. PCT/CA2004/002147	International filing date (day/month/year) 16 December 2004 (16-12-2004)	Priority date (day/month/year) 17 December 2003 (17-12-2003)																									
International Patent Classification (IPC) or both national classification and IPC IPC ⁷ : C09C 1/22, C22B 7/02, C09C 1/00, C09C 3/00, C22B 3/04																											
Applicant FERMAG INC. ET AL																											
<p>1. This opinion contains indications relating to the following items :</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 15%;"><input checked="" type="checkbox"/> [X]</td> <td style="width: 25%;">Box No. I</td> <td style="width: 60%;">Basis of the opinion</td> </tr> <tr> <td><input type="checkbox"/> []</td> <td>Box No. II</td> <td>Priority</td> </tr> <tr> <td><input type="checkbox"/> []</td> <td>Box No. III</td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td><input type="checkbox"/> []</td> <td>Box No. IV</td> <td>Lack of unity of invention</td> </tr> <tr> <td><input checked="" type="checkbox"/> [X]</td> <td>Box No. V</td> <td>Reasoned statement under Rule 43bis.1(a)(I) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement.</td> </tr> <tr> <td><input type="checkbox"/> []</td> <td>Box No. VI</td> <td>Certain documents cited</td> </tr> <tr> <td><input checked="" type="checkbox"/> [X]</td> <td>Box No. VII</td> <td>Certain defects in the international application</td> </tr> <tr> <td><input checked="" type="checkbox"/> [X]</td> <td>Box No. VIII</td> <td>Certain observations on the international application</td> </tr> </table> <p>2. FURTHER ACTION If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.</p> <p>If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.</p> <p>For further options, see Form PCT/ISA/220.</p> <p>3. For further details, see notes to Form PCT/ISA/220.</p>				<input checked="" type="checkbox"/> [X]	Box No. I	Basis of the opinion	<input type="checkbox"/> []	Box No. II	Priority	<input type="checkbox"/> []	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	<input type="checkbox"/> []	Box No. IV	Lack of unity of invention	<input checked="" type="checkbox"/> [X]	Box No. V	Reasoned statement under Rule 43bis.1(a)(I) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement.	<input type="checkbox"/> []	Box No. VI	Certain documents cited	<input checked="" type="checkbox"/> [X]	Box No. VII	Certain defects in the international application	<input checked="" type="checkbox"/> [X]	Box No. VIII	Certain observations on the international application
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Name and mailing address of the ISA/CA Canadian Intellectual Property Office Place du Portage I, C114 - 1st Floor, Box PCT 50 Victoria Street Gatineau, Quebec K1A 0C9		Authorized officer Sonia John (819) 934-3599																									
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**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/CA2004/002147

Box No. I Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language which it was filed, unless otherwise indicated under this item.

☐ This opinion has been established on the basis of a translation from the original language into the following language _____, which is the language of a translation furnished for the purposes of international search
(under Rules 12.3 and 23.1(b)).

2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of :

a. type of material

)

☐ a sequence listing

☐ table(s) related to the sequence listing

b. format of material

☐ in written format

☐ in computer readable form

c. time of filing/furnishing

☐ contained in the international application as filed.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statement that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments :

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Box No. V Reasoned statement under Rule 43bis.1(a)(I) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	<u>1-22</u>	YES
	Claims	<u>23-28, 30, 31 (29 missing)</u>	NO
Inventive step (IS)	Claims	<u>NONE</u>	YES
	Claims	<u>1-28, 30, 31 (29 missing)</u>	NO
Industrial applicability (IA)	Claims	<u>1-28, 30, 31 (29 missing)</u>	YES
	Claims	<u>NONE</u>	NO

2. Citations and explanations :

- D1: JEBRAK MICHEL, MAURICE MORENCY and DENISE FONTAINE:
"Caracterisation et technologie de traitement des poussières d'acierage a Sorel -Tracy",
Quebec Department of the Environment - St. Lawrence Centre, Environment Canada, March 1993
- D2: CA 1184363 A (BAYER AKTIENGESELLSCHAFT) 26 March 1985 (26-03-1985)
- D3: CA 1331274 C (BAYER AKTIENGESELLSCHAFT) 09 August 1994 (09-08-1994)
- D4: CA 1186885 A (BAYER AKTIENGESELLSCHAFT) 14 May 1985 (14-05-1985)

Novelty (N)

Claims 1-22 comply with **PCT Article 33(2)**. Document D1 is considered as describing the closest prior art, however, since D1 does not disclose that an anionic surfactant is added to the slurry to disperse the ferrite particles adsorbed on the magnetite particles, the subject matter of claim 1 is novel. Claims 2-22 are dependent on claim 1 and, as such, are also considered novel.

Claims 23-26 and 30 do not comply with **PCT Article 33(2)**. The subject matter was disclosed before the claim date in D2. D2 discloses a ferrite pigment and its use as a pigment in organic binders, plastics, building materials, paper, ceramic, and anti-corrosion paints. Although the ferrite pigment disclosed in D2 is not manufactured from an EAF dust, no advantages have been disclosed in the present invention to show that a ferrite pigment manufactured from an EAF dust would have any advantages over a ferrite pigment manufactured in any other way. A ferrite pigment resistant to leaching is not new as all ferrite pigments must have some degree of resistance to leaching otherwise the pigment would not be useful. Also, an allegedly new method of manufacture does not bestow patentability on an old product. Therefore claims 23-26 and 30 are not novel.

Claims 27, 28, and 31 do not comply with **PCT Article 33(2)**. The subject matter was disclosed before the claim date in D3 and D4. D3 discloses a magnetite pigment and its use as a pigment in building materials and toners. D4 discloses a magnetite pigment and its use as a pigment in plastics, plasters, concrete tiles and magnetic recording media. Although the magnetite pigments disclosed in D3 and D4 are not manufactured from EAF dust, no advantages have been disclosed in the present invention to show that a magnetite pigment manufactured from an EAF dust would have any advantages over a magnetite pigment manufactured in any other way. Also, an allegedly new method of manufacture does not bestow patentability on an old product. Therefore claims 27, 28, and 31 are not novel.

See Supplemental Box for further details

Box No. VII **Certain defects in the international application**

The following defects in the form or contents of the international application have been noted :

On page 1, line 18, "Prodecure" should be written as "Procedure".

On page 4, line 12, on page 10, line 8 and on page 23, line 5, "alcaline" should be written as "alkaline".

On page 4, line 14 and on page 10, line 10, "alcalinity" should be written as "alkalinity".

On page 12, line 6, the bracket should be removed after the word "treatment".

On page 12, lines 11-12, it is unclear what is meant by the expression "wave present and stabilized".

On page 16, line 17, "gradse" should be written as "grades".

On page 19, line 25, the percentage of ZnO in the dust slurry is not given.

The description discloses on page 27, line 5 that reference character 40 represents second treatment, however, in Figure 1, reference character 40 is represented by a decanter icon. The icon representing reference character 40 in Figure 1 should be changed from a decanter to a tank or this results in a lack of clarity.

The drawings and/or description do not comply with Rule 11.13 (I) of the Patent Cooperation Treaty Regulations. Reference signs not mentioned in the description shall not appear in the drawings, and vice versa. Reference signs 31, 56, 214, 216, 218 and 300 appear in the drawings but are not found in the description.

In Figure 3, it is believed that reference character 42 should be replaced with reference character 43. Figure 3 represents a third grade ferrite pigment in which nitric acid is used as the leaching agent. On page 40, lines 15-17, it is disclosed that nitric acid as a leaching agent is represented by reference character 43, not reference character 42.

The drawings do not comply with Rule 11.13 (a) of the Patent Cooperation Treaty Regulations. Drawings shall be executed in durable, black, sufficiently dense and dark, uniformly thick and well-defined, lines and strokes without colourings. Figures 10-13 do not comply with Rule 11.13 (a) as they are unreadable.

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Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made :

The following defects do not comply with PCT Article 6:

The term "treating" is vague and renders claims 1, 10, and 16 unclear.

The ferrite and magnetite pigments in claims 23 and 27, respectively, should be defined by structure, properties and characteristics independently of the process for their manufacture. Defining the pigments in terms of their process of manufacture renders the claims unclear.

The expression "it shows a resistance to leaching" is vague and renders claim 24 unclear. All pigments show some degree of resistance to leaching otherwise the pigment would not be useful.

The claims do not comply with Rule 6.1 (b) of the Patent Cooperation Treaty Regulations. If there are several claims, they shall be numbered consecutively in Arabic numerals. Claim 29 is missing.

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of: **Box No. V**

Inventive Step (IS)

Claim 1 does not comply with **PCT Article 33(3)**. The subject matter of this claim would have been obvious on the claim date to a person skilled in the art or science to which it pertains having regard to D1 in view of common knowledge. D1 discloses a hydrometallurgical process for the treatment of steel mill electric arc furnace (EAF) dust. EAF dust is washed in water to dissolve simple oxides, salts and unstable heavy metals. The resultant solution is then decanted resulting in a supernatant liquid containing dissolved simple oxides, salts and unstable heavy metals and a slurry containing ferrites and magnetites. The slurry is then separated from the supernatant liquid. The slurry containing ferrites and magnetites can be treated to produce ferrite and/or magnetite pigments for use in paints, ceramics, cement, concrete and powder metallurgy. Although D1 does not disclose the addition of an anionic surfactant to the slurry, one skilled in the art would know to use an anionic surfactant as it is disclosed on page 8.6 of D1 that better results would be expected if a dispersant more appropriate than water is used.

Claims 2-21 do not comply with **PCT Article 33(3)**. Dependent claims 2-21 do not appear to contain any additional features, which in combination with the features of any claim to which they refer, involve an inventive step because their features are either disclosed in D1 or come within the scope of common knowledge to a person skilled in the art and thus the resultant advantages of the invention would be obvious.

Claim 22 does not comply with **PCT Article 33(3)**. The subject matter of this claim would have been obvious on the claim date to a person skilled in the art or science to which it pertains having regard to D1 in combination with D4. It would be obvious to one skilled in the art to produce a pigment as shown in D1 then coat it with an inorganic coating and micronize the coated pigments as shown in D4.

Claims 23-28, 30, and 31 do not comply with **PCT Article 33(3)**. Since the subject matter of claims 23-28, 30, and 31 is not new, claims 23-28, 30, and 31 cannot be considered inventive.

Industrial Applicability (IA)

The subject matter of claims 1-28, 30, and 31 is considered to be industrially applicable and thus fulfills the requirements of PCT Article 33(4).